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VALUE OF THE CALYX SPRAY IN THE
CODLING MOTH CONTROL SCHEDULE:

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Much has been said about the calyx spray for the control of the codling moth, some of which has been to the effect that it may be a useless expense. This has perhaps left a doubt in the minds of you who are fruit growers, especially this year when every possible economy must be considered. Let me say right now that the calyx spray is the most important single application for the codling moth, the one that you can least afford to omit. There is ample evidence of this, accumulated during many years of experimentation.

Just last year we made a test at Yakima, and I wish I could show you the chart giving the results of this test, as the effect of leaving out the calyx spray is very strikingly shown. I can, however, give you the figures, and I will try to do so in such a manner that you will see the difference. This test was made in a very wormy apple orchard that was thoroughly treated with a calyx spray and six cover sprays of lead arsenate, except that the calyx spray was omitted from three of the trees. Winesap apples were used for the test, because they have been thought to be less affected by the omission of the calyx spray than other varieties.

The chart shows that the apples were 28 per cent wormy on trees that did not receive the calyx application in spite of the six cover sprays. Nearby trees, sprayed in exactly the same way except that the calyx spray was applied, bore fruit that was only 16 per cent wormy. Nearly 2 per cent of the fruit that did not receive the calyx spray was wormy at the calyx, but less than one-half of 1 per cent of that sprayed in the calyx was calyx-wormy.

It must be borne in mind that in this test only three trees were left unsprayed in the calyx, and that all the trees around them were sprayed at that time; and also that the first cover spray was applied in ample time to poison the first worms that hatched on the trees. If you should omit the calyx spray in your entire orchard, and then fail to get the first cover spray on in time, on account of windy weather or for any other reason, the increase in worms would probably be greater than this test indicates.

This test was made in a heavily infested orchard. In an orchard with a light infestation of worms the difference would be less, but it should be in the same proportion. The infestation would have to be extremely light to result in a difference so small that the calyx spray would not pay. Moreover, there is always the possibility of failing to get the first cover spray on early enough, as just mentioned. Many of the earliest worms come

from eggs laid on the leaves, and they often get their first meal on the leaves. Many of them, also, attempt to enter the fruit through the calyx. Your calyx spray therefore constitutes very valuable insurance, for it coats the leaves with poison, protects the calyx cups, and even places some poison on the surface of the fruit, all of which gives some protection in case the worms start hatching before the first cover spray is completed.

All that I have said applies also to pears. It has been thought that because the calyx cups of pears do not close so completely as those of apples these cups could be filled just as well with the cover sprays. Definite tests, however, have shown a distinct advantage in the calyx spray. Bartlett pear trees which were given no calyx spray produced 14 per cent of wormy fruit, and adjoining trees which received a calyx spray produced only 4 per cent of wormy fruit. There were 6.5 per cent of calyx-wormy pears where the calyx spray was omitted, and only a little over 1 per cent where the calyx spray was used.

It is evident, with both pears and apples, that the increase in wormy fruit is not caused only by the fruit that is actually wormy at the calyx, as this increase is greater than the actual increase in calyx-wormy fruit. Much of it is caused by second-brood worms developing from the early worms that have entered the fruit through the unsprayed calyx and have thus escaped poisoning. The first brood must be controlled as completely as possible in order to prevent the development of a large second brood. The calyx spray is one of the most important weapons that the fruit grower can employ in the fight against this first brood.